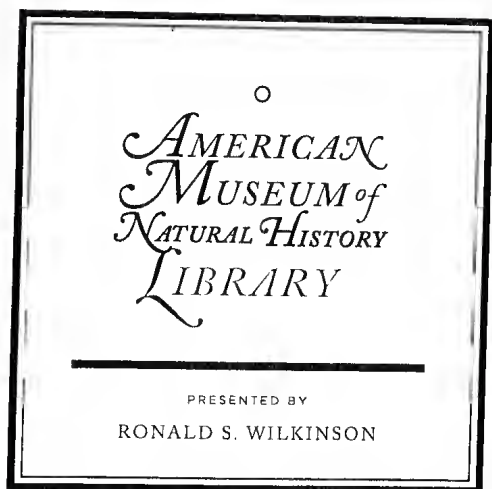


By William Curtis (17-16-99)

London

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Ron Williamson
will get water
from S.W. Canyon

17 Jan. 1967.



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INSTRUCTIONS
FOR
COLLECTING AND PRESERVING
INSECTS;
PARTICULARLY
MOTHS AND BUTTERFLIES.

Illustrated with a COPPER-PLATE,
On which the NETS, and other APPARATUS
necessary for that Purpose, are delineated.

— *quod alii Venationibus, Confabulationibus Tesseris,
Chartis, Lufibus, Compotationibus insumunt, illud ego Ani-
malculis indagandis, colendis, contemplandis impendo.*

RAY.

L O N D O N:
Printed for the AUTHOR,
And Sold by GEORGE PEARCH, Cheapſide.
M D C C L X X I.



P R E F A C E.

THE following instructions were originally drawn up for a gentleman going to reside abroad, partly with a view of collecting the various productions of nature, particularly insects.

Most of the English as well as Foreign insects, in the collections which I have lately had opportunities of observing, have been either spoiled in the catching, or, for want of properly know-

knowing how to preserve them, rendered imperfect, and of little or no value.

I regretted that so much time and labour should be spent to so little purpose; and for that reason was induced to make these instructions, with some additions, more generally known; from which it is hoped that some advantage may result, not only to the young Aurelian and Entomologist, but that they may excite to a more general investigation of the insects of this country.

INSTRUCTIONS
FOR
COLLECTING AND PRESERVING
INSECTS.

Of Insects in General.

THIS little treatise being intended for those who are altogether unacquainted with insects, as well as for those who have made them their particular study, it may not be amiss to premise a short account of the nature of insects in general.

Almost every insect, from the largest beetle to the smallest mite, is originally

B pro-

produced from an egg ; which the female, guided by unerring instinct, deposits in some place capable of affording it proper and sufficient nourishment in its future state : the places to which they are committed are many and various, and strikingly display the wisdom of an all-wise Providence.

Some deposit them on the various parts of plants, some commit them to the earth, and others to the waters ; some deposit them on putrid flesh, others in the bodies of living animals, even of insects themselves.

After a period more or less short, the little Larvæ, Caterpillars, or Maggots, come forth ; and feeding on their destined food till they are arrived at their full growth, change into the Chrysalis or Aurelia state. In this they remain

remain some time longer ; during which they are for the most part inactive ; and lastly come forth in their perfect or fly state, when they propagate their species and die.

Butterflies and moths being not only one of the most numerous, but the most beautiful class of insects, whether we consider the variety or richness of their colours, and from the peculiar delicacy of their structure requiring more care to be used in catching as well as in preserving them, we chose first to speak of, and to be more particular in our directions concerning them.

There are two methods of collecting insects of this kind ; first, by breeding, 2dly, by catching them in their fly state. Of these the former is much to

be preferred ; as, besides the pleasure which arises from observing the gradual progress of the insect, from its egg or caterpillar to its perfect or fly state, we can kill them before they have in the least injured the farina or meal of their wings by flying.

The difficulty likewise of procuring the most beautiful and valuable insects of this class in their fly state, makes this method much the most eligible. Most of the Sphinges of Linnæus, or Hawk Moths as they are called, are very seldom seen in their fly state, and when seen on the wing generally elude the swiftest pursuit ; but in their caterpillar state they are often found, and easily taken. Thus the Sphinx * Atropos

* We have used on this occasion the names of the celebrated Sir Charles Linnæus ; a name dear to

pos (Jeffamine Hawk Moth) the largest and one of the most beautiful species of moth this country produces, is frequently found feeding on the Jeffamine and Potatoe; the Sphinx Elpenor, or Elephant Hawk Moth, on the Galium Palustre, or White Ladies Bed Straw; the Sphinx Ocellata, or Eyed Hawk, on the Willow; Sphinx Tiliæ, or Lime Hawk Moth, on the Lime tree; Sphinx Ligustri, or Privet Hawk Moth, on the Privet; Phalæna Pavonia, or Emperor Moth, on the Briar, Blackthorn, &c. and so of a great number of others.

to every naturalist; and whose candour, genius and industry can never be too much admired. It were to be wished that our English names were in general equally expressive.

•
Method

Method of collecting them in their Caterpillar State.

Besides the méthode of collecting caterpillars by attentively examining the leaves and other parts of plants at different times of the year, there is another ; viz. by beating the boughs of trees, particularly the taller ones, with long poles, spreading a large sheet underneath to receive them,

By this means many very valuable caterpillars are often caught, which would with great difficulty be procured by any other means,

Caterpillars should be handled as little as possible ; the more hairy ones are in general the least hurt by it. It will be necessary to carry a box in the pocket,

pocket, partly filled with leaves, to put them in.

Method of rearing them.

The caterpillars being procured, our next endeavour is to rear them. For this purpose they are to be supplied with some of the plant they are found feeding on. Although many of them live on a variety of food, the greatest part are attached to some particular kind, deprived of which they would soon perish.

To save the unnecessary trouble of supplying them with fresh food every day, several sprigs of the tree or plant are to be put into a wide mouth'd glass filled with water, and the caterpillars placed on them. Most plants may in this manner be preserved fresh for
three

three or four days. The glass, together with the caterpillars and their food, is to be placed in the breeding box represented in the plate, and a constant supply of fresh food is to be given them as soon as the former appears in the least withered.

After they are arrived at their full growth, they will leave off eating, and either immediately or very soon change into chrysalis ; previous to which, Butterflies spin a little web, just sufficient to suspend themselves by ; many of the moths, like the silkworm, spin a large web, in which they enwrap themselves ; and a great number work themselves into the earth, where they spin themselves cases, or change without any spinning ; as do most of the Sphinges or Hawk Moths. It will therefore be necessary to cover the bottom

tom of the box with fine mould to the depth of three or four inches, and keep it constantly moist.

It frequently happens that Caterpillars are what the Aurelians call stung; that is, have the eggs of the Ichneumon Fly deposited in them: in such case, the eggs are generally hatched before the caterpillar goes into chrysalis. The Larvæ or Maggots of the fly being arrived at their full growth, eat their way out of the body of the caterpillar, and, enwrapping themselves in little cases of their own spinning, change into chrysalis; and in this state have been considered as the Eggs of the caterpillar, by persons unacquainted with insects. The caterpillar, having afforded subsistence to its natural enemy, dies.

Caterpillars, previous to their going into chrysalis, generally lose the brilliancy of their colours, and many of them rove about for a considerable time.

After remaining in their chrysalis state till near the time of their coming forth, such as are inclosed in a hard case or spinning, as the *Phalæna*, *Vinula*, *Puss Moth*, *Phalæna Quercus*, &c. are to be carefully freed from it; as the aperture which the Insect naturally makes, is often too narrow for it to pass out without considerably injuring its plumage. The opening will be best made by cutting off the largest extremity of the case, taking care not to wound the inclosed Pupa or Chrysalis.

Method

Method of collecting them in their Chrysalis State.

Butterflies and Moths may often be found in chrysalis under the projections of garden walls, pales, outhouses, in summer-houses, &c. and frequently on their food.

A great variety of Moths in this state may with more certainty be found by digging in the winter months under the trees which they feed on, particularly under the Oak, Willow, Lime, and Elm Trees. When they are dug up in this manner, they are to be placed as soon as convenient in a box, such as is represented in the plate, and kept covered with moist earth till the ensuing spring, when they may be dug
C 2 up

up, and placed within a few inches of the surface of the mould, and in that manner left to come out of themselves.

It frequently happens, that if we are not so fortunate as to collect any Chrysalis's, we are amply recompensed by the variety of Beetles we thus dig up.

Method of collecting them in their Fly State.

The delicacy of the wings of these Insects will not admit of their being caught without injury but in Nets made of the finest materials.

The collector then should in the first place furnish himself with a net adapted to this purpose: that which is represented in the plate, has on
repeated

repeated trials been found to answer best. (Vide explanation of the plate.) The net should be made of fine gauze, having its stiffening taken off by being soaked a little while in warm water; or if dyed of a green colour, which is common, this will be unnecessary.

He is next to provide himself with two or three large oval boxes for the pockets, lined at top and bottom with thin cork; and a pin-cushion well stored with pins of various sizes.

Being thus furnished with proper instruments, we shall proceed to give him such instructions as may enable him to use them with success.

It is particularly to be observed, that there is a continual succession of
Insects

Insects, as well as of Plants. Some appear with the early Primrose, others accompany the late flowering Ivy. So that in this respect, the Aurelian and Entomologist may regulate their excursions by those of the Botanist. The latter would in vain search for the Pilewort (*Ranunculus Ficaria*) in the month of July; and the former be equally disappointed in seeking after the Orange Tip (*Papilio Cardamines*) in the month of August.

Some of those insects continue longer in their fly state, and their plumage is less hurt by flying than others. Some continue a few days only; others several weeks. In general Moths and Butterflies, unless they are caught the first day of their coming out of Chrysalis, are worth little: hence arises the necessity of our
care-

carefully watching those particular times, and of making frequent excursions, to have them in the greatest perfection.

Butterflies are to be caught on the wing only when the sun shines warm. They inhabit a variety of places. The greatest number of them frequent woods, and may be taken in or near them; as the *Papilio Iris*, *Populi*, *Hyperantus*, and most if not all the *Fritillaries*. Some delight in meadows, as the *Papilio Justina*, *Galathæa*, *Phlæas*, *Comma*, &c. and others frequent gardens, clover fields, heaths, lanes, &c. Many of those which frequent woods are taken with much greater facility in the morning, a few hours after sun-rise; at which time they are found feeding on the flowers that grow by the sides of the woods:
after-

afterwards, when the sun shines with more strength, they fly high, and with such swiftness as to be taken with the utmost difficulty.

Moths fly chiefly in the evening, a little after sun-set. Like Butterflies, they inhabit a variety of places, and are to be met with in the greatest plenty near woods. They may also be taken in great numbers in the day-time by beating the hedges, &c. more particularly in the afternoon, as the least motion will then put them on the wing. They are likewise frequently met with in the day-time sticking to the bark of trees, on walls and pales that surround gardens, &c. and may be thus caught in great perfection. Some few, like the Butterflies, fly in the middle
of

of the day when the sun shines warm.

The ingenious naturalist, Geoffroy, informs us that Moths may be taken in great plenty by means of a Candle and Lanthorn carried into or near some wood towards dark; that the moths immediately fly to the light, and are caught with great facility.

We cannot recommend this method from our own experience; but, from the propensity we frequently observe in Moths to fly towards, and even into, lighted candles, we apprehend it to be a very eligible one.

An expertness in using the Net is attained by practice only.

D

Having

Having taken the Butterfly or Moth in the Net, we are to proceed with caution; as on killing it properly, its beauty in a great measure depends. We are not to take hold of it indiscriminately in any part; but are, by means of the net, to bring its wings, if possible, into an erect position, and then press the under part of the thorax or breast betwixt the thumb and forefinger sufficiently hard to kill it: by this means the wings are neither distorted, nor their plumage injured.

The net being then opened, the insect is to be laid hold of gently by one of the horns, and again placed betwixt the thumb and forefinger, in which situation it is to be held while a pin, proportioned to its size, is stuck through the upper part of the thorax.

thorax or back. The insect is then to be placed in the pocket box.

Method of managing them in their Fly State; as Setting, Preserving them, &c.

Though the insects may by this means be caught uninjured, something further is necessary to make them appear to advantage. This is called setting them; and is done in the following manner:

The insect being stuck through with a pin of a proper size, is to be placed, before its wings are become stiff, on a piece of cork having a smooth surface, and covered with white paper. The body of the fly should not be made to touch the cork, when stuck into it, but to stand up

some little distance from it. (It being only the edges of both wings that are to fit close to the cork, not the wings to lie flat on it.) The wings are then to be expanded (Vide Plate) with a fine needle, or some sharp-pointed instrument.

The upper edge of the superior wings is to be placed in a line with the head of the insect; and they are to be kept in this situation by means of little braces, made of card paper, cut in the shape represented in the Plate. These must be proportioned to the size of the wings, and fitted to their shape, by being more or less bent. By these means, the spots, &c. on both wings are made conspicuous, and the insect appears to much greater advantage.

To

To set them well, however, requires considerable practice, and some ingenuity.

After remaining in this position four or five days, or till it is become thoroughly stiff, the braces may be taken off, and the insect removed into the store box; which should be so constructed, as effectually to seclude those little insects, which are so apt to infest and destroy collections of this kind. The shape of the store box is immaterial; that which is represented in the plate is simple, and answers every purpose. The inside of it should be lined with thin cork; and some slips of cloth glued to its edges to make it shut closer.

If, notwithstanding these precautions, insects should get among them
(which

(which the fine powder, that falls from and furrounds such insects as are attacked, quickly discovers) immersing them in rectified spirits of wine immediately kills them without injuring the fly. And if a little corrosive sublimate be dissolved in the spirit they are immersed in, it will prevent them from any future attacks.

Camphire kept in the boxes is also a good preventative.

The flies may be either kept in boxes of this kind, or in such cabinets as the collector may think proper. The bottom of the drawers, if in cabinets, should also be lined with thin cork; covered with white paper.

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*Method of collecting Insects of the
Beetle Kind.*

§. I.

By insects of the Beetle kind, we mean all such as have thin membranous wings covered with hard cases or shells, and included in Linnæus's first class of insects, COLEOPTERA. These have generally been termed Scarabæi, or Beetles: some few of them have obtained distinct English names, as the Chafer, Lady-bird, Earwig, &c. and all have been divided by Linnæus into Genera and Species.

The insects of this, as well as of the preceding and following classes, may be found in their Caterpillar or Grub state, in which they are often extremely destructive to the roots of plants; and may in like manner be brought to their perfect or fly state, regard being had to
their

their different manner of feeding. The time and care, however, required for this purpose, is probably more than can be spared by the generality of collectors: we would nevertheless wish the curious Entomologist, who has both leisure and abilities for this purpose, to engage in pursuits of this kind, as being the only means of establishing with certainty the different Genera of Insects.

The insects of this class are in general easily collected in their fly state. Some creep and fly in the day-time when the sun shines warm; others, like the moths, fly in the evening and night only.

Their habitations are exceedingly diversified. Some are found in the bodies of rotten trees, as the *Lucanus Cervus*,
Flying

Flying Stag, *Scarabæus Cylindricus*, and many of the *Cerambyces*: others among the dung of various animals, particularly of horses and cows, as the *Scarabæus Fimetarius*, &c. Some reside in the bodies of animals that are become putrid, as the *Silpha Vespillo*: great numbers are found on the leaves and stalks of plants, as the *Scarabæus Melolantha*, Chafer, *Coccinellæ*, Lady-birds, *Chrysomelæ Curculiones*, &c. others delight more particularly in the flowers of plants, as the *Scarabæus Auratus*: some reside altogether in woods, as many of the *Cerambyces*, and they are often found in great plenty under the bark of decayed trees: some are found swimming on the surface of standing waters, as the *Gyrinus Natator*: others in pools, ditches, ponds, &c. as the *Dytisci*: Some are discovered from the light which they emit, as the

Lampyris Noctiluca Glow-worm: and a vast quantity is found on dry banks, sand banks, sand pits, pathways, &c. particularly when the sun shines warm.

These insects, as soon as caught, may, with a pin of a proper size, be stuck through the body, close to the future that runs down the middle of the back, as represented in the plate (vide fig. 6) and then placed in the pocket box; taking care that they do not injure one another from being placed too close together. Or if the collector be disposed to procure this class of insects, he will find it very convenient, and much less cruel, to carry a number of small pill-boxes in his pockets, in which the insects may be readily secured and kept till he returns home, without suffering any pain. They are then to be immersed
in

in boiling water, as being the most ready means of killing them, and afterwards stuck through in the manner above-mentioned ; being careful to make the pin pass a sufficient length through the body of the insect, and then placed on a piece of smooth cork. When they have remained in this situation two, three, or four days, according to the size of the insect, their legs, antennæ, &c. are to be extended with a pair of fine forceps or tweezers, and placed in a natural position ; in which they will, if proper care be taken of them, always afterwards remain. They are then to be placed in the store box.

§. II.

The next class of insects is the HEMIPTERA.

The Genera contained in this class are principally these ; viz. *Blatta*, Cockroach, *Mantis*, *Gryllus*, Locust, Grasshopper, Cricket ; *Fulgora*, *Cicada*, *Notonecta*, *Nepa*, and *Cimex*, or Bug.

The first of these, the *Blatta*, like the bed bug *, has been imported from abroad, where they are equally numerous and troublesome. † They are found

* Bugs, according to Southall, were scarce observed in England till after the fire of London, in 1666. It is supposed that they were then imported with the timber which the new houses were built with.

† They are as troublesome as they are common in the island of Senegal. Though they are scarce

an

found in the greatest plenty here in bake-houses ; particularly in the night, their usual time of feeding.

All those of the next genus, Mantis, are foreign ; some of them are extremely remarkable and curious, and from their particular shape have been called Walking Leaves. They are found in the meadows, and on the leaves of plants and trees. The Grylli mostly reside in meadows and fields among the herbage. The mischief done by the Blattæ is nothing, compared with the ravages of some of those, viz.

an inch thick, they do an incredible deal of mischief. They gnaw linen, sheets, wood, paper, books, and in short whatever comes in their way : they attack even the Aloes, the bitterness of which keeps off all the other insects.

Adanson's Voyage to Senegal, p. 296.

viz. the Locusts.* One species of this genus, the *Gryllus Domesticus*, resides in houses, particularly where there are ovens.

* In this voyage (says Adanson) I was witness myself, for the first time, to the mischief done by Locusts; that scourge so dreadful to hot climates! The third day after our arrival we were still in the road, when there suddenly arose over our heads, towards eight o'clock in the morning, a thick cloud, which darkened the air, and deprived us of the rays of the Sun. Every body was surpris'd at so sudden a change in the sky, which is seldom overcast in this season: but we soon found that it was owing to a cloud of Locusts, rais'd about twenty or thirty fathoms from the ground, and covering an extent of several leagues; upon which it poured a shower of those insects, which fell to devouring while they rested themselves, and then resumed their flight. This cloud was brought by a very strong East wind; it was all the morning in passing over the adjacent country; and we imagined that the same wind drove the Locusts into the sea. They spread desolation wherever they came; after devouring the herbage, with the fruits and leaves of trees,

ovens. Most of the Fulgoræ are discoverable from the light which they emit ; these, like the Mantæ, are foreign, and many of them equally curious. The Cicadæ are found on trees and plants ; the Notonectæ and Nepæ reside in stagnating waters. There is scarce a person who has lived a while in any very populous place, but knows where

trees, they attacked even the buds and the very bark : they did not so much as spare the reeds with which the huts were thatched, notwithstanding that these were so dry : in short they did all the mischief that can be dreaded from so voracious an insect.

The inhabitants of Asia, as well as Europe, sometimes take the field against Locusts, with all the dreadful apparatus of war. The Bashaw of Tripoli in Syria some years ago raised 4000 soldiers against these insects, and ordered those to be hanged who refused to go.

Hasselquist's Voyage to the Levant, &c.

where to find one species of the next genus, the Cimex or Bug, to particularize the places where the remaining species of this very numerous genus reside, would be almost endless; they are in short to be met with almost everywhere.

These insects may be killed either with boiling water, or a few drops of spirit of turpentine. They are all of them to be stuck through the thorax or back betwixt the shoulders. The wings of the Grylli, and some of the others, are to be expanded, and kept so by means of the little braces; and their legs, antennæ, &c. are also to be placed in a natural situation.

§. III.

The insects contained in the next class, NEUROPTERA, are chiefly aquatic, residing in the waters in their caterpillar state, and flying about them in their perfect state. The principal genera are, the Libellula, Dragon Fly, Ephemera, May Fly, Phryganea, Hemerobius, and Panorpa. The Libellulæ are considered by the generality of people as containing in them something venomous, and from hence have derived their several names of Adder Spear, Adder Bolt, Horse-stinger, &c. It must be confessed, that their shape, manner of flight, &c. is such as might readily raise such an idea: the collector, however, must not be misled by their appearance, and intimidated from catching them, they being perfectly harmless,

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less,

less, indeed equally so with the Gnats they feed on.

The net used for catching Butterflies will be very convenient for catching the insects of this class, particularly the Libellulæ.

They are all of them readily killed, either by squeezing their thorax, or with a few drops of spirit of turpentine. The same means are to be used in setting them, &c. as in the Hemiptera.

§. IV.

The insects of the next class, HYMENOPTERA, are for the most part armed with stings, which are either venomous or harmless. The principal genera are the Tenthredo, Ichneumon; Sphex,

Sphex, Chrysis; Vespa, *Wasp*; *Hornet*; Apis, *Bee*; Formica, *Ant*.

The Tenthredines are found on trees and flowers in their caterpillar state: they feed on the leaves of plants. The Ichneumones are found in the same manner: in their caterpillar state they live chiefly in the bodies of other insects, particularly of the caterpillars of Moths and Butterflies, in which they deposit their eggs. The Sphex resides principally in sand banks; it is also caught on flowers, &c. This insect catches and kills others, which it buries in the sand, having previously deposited its eggs in them. The Chrysis, (many species of which are exceeding beautiful) is found flying about old walls, posts, sand banks, &c. in which it builds its nest. *Wasps*, *Bees*, and *Ants* are found on

flowers and fruits, and almost on every thing that is sweet.

These insects being armed many of ~~them~~ with poisonous stings, it will be necessary to use the forcep nets to catch them with (vide fig. 7.) When caught, a pin is to be stuck through them while in the net (i. e. through the thorax, as in fig. 8.) It is very difficult to kill these insects without injuring them in some respect; boiling water hurts their wing, and the fine hairs with which the bodies of many of them are covered; spirits of wine or turpentine proves immediately fatal to some, while others are scarce affected by it; and letting them remain transfixed till they are dead, will probably be thought too cruel.* We shall leave the collec-

tor

* The best method, as I have since been informed by an ingenious gentleman, is to stick them

tor to adopt either of these methods, or any other he pleases. When dead, their wings, &c. are to be expanded, and kept in as natural a position as possible.

§. V.

Insects with two wings only, form the next class, DIPTERA: it contains various kinds of *flies* and *gnats*. There is scarce any place in which some of the former are not to be met with; but they are found more particularly on all kinds of plants and flowers, especially on the umbelliferous ones. Some of them fly about cattle of various kind, in the skins of which they deposit their eggs, as the *Oestrus Bovis*, &c. The latter
 mostly

them through with a needle dipt in aqua-fortis. The Sphinges, and other large Moths, are likewise killed in this manner with the least injury.

mostly fly about waters and watery places.

These insects are easily killed by a few drops of spirit of turpentine : their wings are to be expanded so as that their bodies may become apparent ; and a little brace should be placed underneath them, to prevent their bodies from being too much incurvated in drying, which they are very apt to be.

§. VI.

The insects of the last class are such as have no wings at all, and are therefore called, *APTERA*. *Spiders, Scorpions, Centipes, and Crabs* of various kinds, make up the principal part of this class. These are so common, and the places they inhabit so generally known, that any information on the means

means of collecting them would be superfluous.

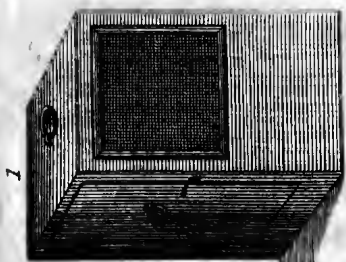
Most of them require to be preserved in some kind of spirits, as spirits of wine, rum, brandy, &c. Such of them indeed as are inclosed in hard shells, may be preserved dry, in the same manner as the insects of the Beetle kind.

As the collector will have frequent occasion for the use of cork, both to line his boxes with, and to set his insects on, we shall inform him how to prepare it for use.

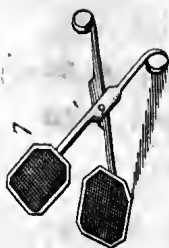
He may procure the cork in large pieces at any of the cork-cutters. These must be cut into smaller ones; and in order to make the cork flat, it is held before the fire till it becomes
hot

hot through ; it is then to be immediately placed betwixt two smooth boards, and a very heavy weight laid on it, where it must remain till cold. Thus flattened, it is to be rasped on both sides, with such a rasp as is used by the bakers ; afterwards with a finer one ; and lastly with a pumice stone, which makes it perfectly smooth. If the cork be thick, and the purpose of it to line boxes, it may be sawed through the middle, and rasped on both sides as before.

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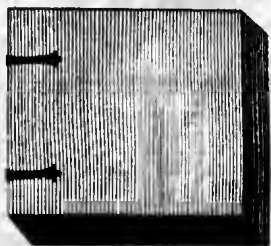
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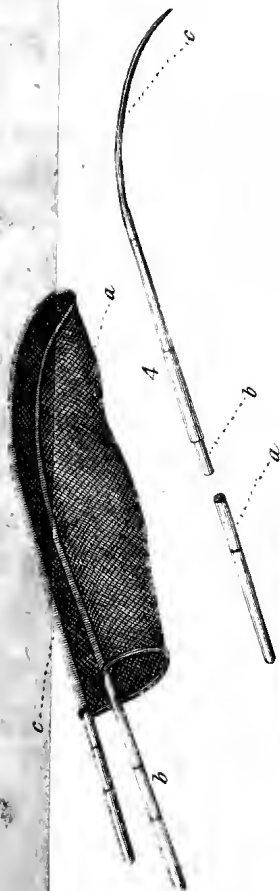
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E X P L A N A T I O N
O F T H E
P L A T E.

Fig. 1. The breeding box. *a.* an opening in the front, covered with gauze; *b.* the door on the side.

N. B. The bottom of it should be covered with fine mould to the depth of four or five inches. The shape and structure of it need not be strictly adhered to.

2. Shews the manner in which the wings of the Butterflies and Moths

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are

are to be expanded, and how the braces are applied to keep them so.

3. The Net used for catching Moths, Butterflies, and other insects. *a.* the part made of fine gauze; *b.* the sticks; *c.* the binding which receives them.

N. B. The sticks, for the convenience of carrying them, are made to take to pieces, somewhat in the manner of fishing rods. They join to one another by means of hollow brass ferrils fixed to the end of each. There are three of them, each of which is about fourteen inches long.

4. Shews one of the sticks; *a.* the brass ferril; *b.* the end of the next stick, which goes tight into it.

To

To the upper end of the sticks is joined in like manner a piece of cane, about two foot long, bent of a proper shape, *c.* Instead of three pieces of wood here represented, the other stick may consist of one entire piece, and be used as a walking-stick. The gause must be edged with two pieces of binding sewed together to receive the sticks; and as the sticks are taper, so must be the cavity: at the upper part of it, where the sticks meet, it must be closed by a few stitches, that the net sticks may shut even together. The net may be about a yard broad when expanded, and the length of it a yard and a quarter. This size, however, may be varied at pleasure.

5. The Store Box.

6. Shews

6. Shews the manner in which the Beetles, &c. are stuck through one of the wings.

7. The Forcep Nets.

8. Shews a fly stuck through the thorax: and in the same manner all the different species of Bugs, Wasps, and Flies in Sect. II. III. IV. and V. are to be stuck.

F I N I S,

Speedily will be published,

A Translation of the FUNDAMENTA ENTOMOLOGICÆ of Linnæus; or, "An Introduction to the Knowledge of Insects."





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